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SUMMARY

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GROWTH PROBLEMS IN THE PRIMARY SECTOR IN DEVELOPING COUNTRIES

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et de Mathématique appliquées

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GROWTH PROBLEMS IN THE PRIMARY SECTOR IN DEVELOPING COUNTRIES

BY

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SUMMARY

1. Agriculture is the fundamental sector in developing countries.

The value added by agriculture exceeds 40% of the national income and the population employed in this sector is more than 80% in countries in which the per capita income is less than $100 per annum.

In countries with a low income level agriculture is the basic development sector. It has to meet the following demands:

1. The rapid increase in population, which demands a minimum rate of food production growth of about 2% to 3%
2. The improvement in quantity is often necessary for some years.
3. A reduction in protein, fat and vitamin deficiencies, and hence a need for a much greater rate of increase in cattle, oilseeds, fruit and vegetables than the figure quoted above.
4. The need to reduce imports of food products.
5. The supply of intermediate products necessary to the development of the agricultural processing industries.
6. The need to finance the purchase of production equipment, as necessitated by development schemes, out of exports.

Agricultural production must therefore increase on a broad basis more quickly than the population at the same time as the proportion of the population engaged in agriculture is decreasing, i.e. there is a need to increase net productivity per worker.

2. Net productivity per worker - the fundamental criterion in agricultural development.

The net productivity of a less developed agriculture is virtually the same as its gross productivity, since it consumes scarcely any intermediate products.

Carolingian agriculture, i.e. certain agricultural civilisations in West Africa to-day, is characterised by cereal yields of approximately 5 ql/ha and a cultivated area of approximately 2 ha per worker.

The corresponding figures in North America are approximately 10 ql and 80 ha. Gross productivity per worker is therefore $\frac{10 \text{ ql} \times 80 \text{ ha}}{5 \text{ ql} \times 2 \text{ ha}}$ = 80 times greater.

On a European family farm the factor is

$$\frac{30 \text{ ql}}{5 \text{ ql}} \times \frac{15 \text{ ha}}{2 \text{ ha}} = 45$$

and on a farm in the Paris basin it is

$$\frac{50 \text{ ql}}{5 \text{ ql}} \times \frac{80 \text{ ha}}{2 \text{ ha}} = 400$$

Gross productivity is therefore 400 times greater. Net productivity is about half, i.e. 200 times greater. These figures are highly significant, but are nevertheless inadequate as a basis on which to evaluate an agriculture completely and reach decisions about development methods and targets.

3. Agricultural diagnosis.

Net productivity per worker must be supplemented by an analysis of three forms of capital: land, working and technical.

Land capital: the transition from the initial "climax" (soil-climate complex) to the artificialised conditions of modern agriculture represents a lengthy chain of land improvements. One of the fundamental elements is humus enrichment and deepening of the soil.

Working capital: characterised by the level of equipment employed - simple hand implements, specialised hand implements, lightweight hand equipment, drawn implements and mechanised equipment.

Technical capital: this involves the level of technical knowledge employed by the farmer.

4. Restrictions on growth in the primary sector.

The development of these three forms of capital determines the improvement in net productivity per worker. The rate of capitalisation is limited in the following ways.

The work involved in carrying out land improvements is enormous. In addition the enrichment of the soil humus requires decades before results are achieved.

The working capital must rise from tens of new francs per hectare to several thousands of new francs per hectare (2,000 in Western Europe), which entails investment tens of times greater than is possible in agriculture. Several decades will therefore be required to achieve this.

As regards technical capital, educational difficulties arising from psychological and sociological structures are well known, and we would merely add that the selection of animal and plant species takes many years.

5. Conclusion.

The transition from primitive agriculture of the Carolingian type to modern agriculture requires an enormous increase in various forms of capital. It has taken several centuries for the European peasant to achieve this.

The importance of biological and psychosociological factors means that even if the period can be considerably shortened it will still take several decades, even in the most favourable cases, for a retarded agriculture to reach the same level of development. This will enable the economist to give more serious thought to methods and targets and to what gradual changes in level are possible and necessary in agricultural development.

S - 1092 E - Nov.1962 - 1,600